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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,804	07/31/2003	Takaaki Endo	00862.023167.	9757

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EXAMINER

MOREHEAD, JOHN H

ART UNIT PAPER NUMBER

2635

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/630,804	Applicant(s) ENDO ET AL.	
	Examiner John Morehead	Art Unit 2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

VULE
SUPERVISORY PATENT EXAMINER

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/8/05; 7/31/03, 11/25/03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 8 recites the limitation "**the common code**" in the recording unit. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claim 1-4, 9-10 rejected under 35 U.S.C. 102(e) as being anticipated by Yoshikawa et al, US 2005/0174426.**

Re claim 1, Yoshikawa discloses an image sensing apparatus (**figs. 6-7**) comprising: first image sensing unit (**first one of cameras 62**) adapted to sense a first direction; second image sensing unit (**second one of cameras 62**) adapted to sense a second direction; first view control unit (**fig. 6: first of mirrors 50 of cameras 62**) adapted to control a view of said first image sensing unit to a first view different from

that view (**the first image view is being reflected off the mirror 50, hence the reflected view is the “controlled” view which is different from the first view**); and second view control unit (**fig. 6: second of mirrors 50 of cameras 62**) adapted to control a view of said second image sensing unit to a second view adjacent to the first view in a horizontal plane (**para 0067, images from the cameras can be picked up in all directions and are coincidence to one another to form a 360 degrees image view**), wherein said first and second view control units (**i.e. mirrors 50**) do not share ridge lines with each other, and a lens center of virtual image sensing unit having the first view approximately matches a lens center of virtual image sensing unit having the second view (**fig. 6, the configured cameras 62 may have the orientation as shown in fig. 8 or 9, which illustrates non-sharing ridge lines without parallax, and a lens center of NP points, para 0074**).

Re claim 2, Yoshikawa reference also discloses the apparatus according to claim 1, wherein said second image sensing unit (**i.e. second one of image pickup units 62**) is arranged near a position opposing said first image sensing unit, and said second image sensing unit senses a direction opposite to the direction sensed by said first image sensing unit (**i.e. first one of image pickup units 62; arrangement can look like fig. 8 or 9 which shows opposing image views, also figure 7, the plurality of image pickup units 62 are faced in opposite directions**).

Re claim 3, Yoshikawa reference also discloses the apparatus according to claim 1, wherein said second image sensing unit (**i.e. image pickup unit**) is arranged at a position separated a predetermined distance from a position of said first image sensing

unit (i.e. camera) in a direction approximately parallel to the direction sensed by said first image sensing unit (i.e. image pickup unit), said first and second image sensing units (i.e. image pickup unit) sense that direction, and said second view control unit is arranged at a position separated the predetermined distance from a position of said first view control unit in that direction. **(Yoshikawa teaches that figure 6 is disposed on figure 7. Figure 6 is an image pickup unit and figure 7 is the image pickup device. Figure 7 shows the image pickup units, element 62, are arranged in a predetermined distance from each other, therefore, the first and second control view units, which are represented by figure 6 element 50, are separated at a predetermined distance from each other).**

Re claim 4, Yoshikawa reference also discloses the apparatus according to claim 1, wherein said first and second view control units comprise mirrors. **(Claim limitation has already been discussed and rejected, see claim 1).**

Re claim 9, Yoshikawa reference also discloses the apparatus according to claim 1, wherein said first and second image sensing units comprise cameras, which sense either a still image or a moving image **(figures 6-9).**

Re claim 10, Yoshikawa reference also discloses a method of controlling an image sensing apparatus, comprising: a step of sensing a first direction using first image sensing unit; a step of sensing a second direction using second image sensing unit; a step of controlling a view of the first image sensing unit to a first view different from that view using first view control means; and a step of controlling a view of the second image sensing unit to a second view adjacent to the first view in a horizontal

plane using second view control means, wherein the first and second view control units do not share ridge lines with each other, and a lens center of virtual image sensing unit having the first view approximately matches a lens center of virtual image sensing unit having the second view (**Claim limitations has already been discussed and rejected, see claim 1).**

5. Claim 1-4, 9-10 rejected under 35 U.S.C. 102(b) as being anticipated by Masabumi, JP 08-125835A (rejection is base on raw machine translation from the JPO patent office).

Re claim 1, Masabumi discloses an image sensing apparatus (**drawing 1**) comprising: first image sensing unit adapted to sense a first direction (**first one of cameras 11**); second image sensing unit adapted to sense a second direction (**second one of cameras 11**); first view control unit (**i.e. mirrors, first one of plane mirrors 12**) adapted to control a view of said first image sensing unit to a first view different from that view; and second view control unit (**i.e. mirrors, second one of plane mirrors 12**) adapted to control a view of said second image sensing unit to a second view adjacent to the first view in a horizontal plane (**drawing 1 shows multiple redirected image views being horizontally “adjacent” to one another, see para 0013**), wherein said first and second view control units do not share ridge lines with each other, and a lens center (**i.e., point Q, see para 0015**) of virtual image sensing unit having the first view approximately matches a lens center of virtual image sensing unit having the second view (**see drawing 2, para 0015-0021**).

Re claim 2, Masabumi also discloses the apparatus according to claim 1, wherein said second image sensing unit **(see fig. 1 and discussion of claim 1 above)** is arranged near a position opposing said first image sensing unit **(see fig. 1 and discussion of claim 1 above)**, and said second image sensing unit senses a direction opposite to the direction sensed by said first image sensing unit **(drawing 1 show a plurality of cameras, 11, opposite from each other at several points within the drawings, therefore the cameras senses a direction opposite from each other)**.

Re claim 3, Masabumi also discloses the apparatus according to claim 1, wherein said second image sensing unit **(see fig. 1 and discussion of claim 1 above)** is arranged at a position separated a predetermined distance from a position of said first image sensing unit **(see fig. 1 and discussion of claim 1 above)** in a direction approximately parallel to the direction sensed by said first image sensing unit **(see fig. 1 and discussion of claim 1 above)**. **All image sensing units 11 sense respective images in substantially the same optical axis)**, said first and second image sensing units **(11)** sense that direction **(as discussed previously)**, and said second view control unit is arranged at a position separated the predetermined distance from a position of said first view control unit in that direction **(the camera section which this invention arranged two or more cameras at equal intervals on the periphery, para 0005)**.

Re claim 4, Masabumi also discloses the apparatus according to claim 1, wherein said first and second view control units comprise mirrors **(claim limitation has already been discussed and rejected, see claim 1)**.

Re claim 9, Masabumi also discloses the apparatus according to claim 1, wherein said first and second image sensing units comprise cameras, which sense either a still image or a moving image (**Drawing 1 illustrates video cameras 11, it is inherent that video cameras can sense moving and/or still images**).

Re claim 10, Masabumi also discloses a method of controlling an image sensing apparatus, comprising: a step of sensing a first direction using first image sensing unit; a step of sensing a second direction using second image sensing unit; a step of controlling a view of the first image sensing unit to a first view different from that view using first view control means; and a step of controlling a view of the second image sensing unit to a second view adjacent to the first view in a horizontal plane using second view control means, wherein the first and second view control units do not share ridge lines with each other, and a lens center of virtual image sensing unit having the first view approximately matches a lens center of virtual image sensing unit having the second view (**Claim limitations has already been discussed and rejected, see claim 1**).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al as applied to claim 1 above and further in view of Kohri et al, US Patent 6,266,479.

Re claim 5, Yoshikawa does not teach the further claim limitations of an image recording unit adapted to record images sensed by said first and second image sensing units; synchronization signal generation unit adapted to output a synchronization signal, with which said first and second image sensing units operate synchronously; and code appending unit adapted to append a code common to each predetermined timing to the images sensed by said first and second image sensing units. However Kohri et al teaches a recording unit (**figure 1**) adapted to record images sensed by said first and second image sensing units (**figure 1 element CMn which denotes a plurality of cameras**); synchronization signal generation unit (**i.e. digital signal processor, figure 1, elements 2 and 103**) adapted to output a synchronization signal, with which said first and second image sensing units operate synchronously; and code appending unit (**figure 6 elements 3043, 3044, 3045**) adapted to append a code common to each predetermined timing to the images sensed by said first and second image sensing units. (**Kohri et al teaches a video signal recording and reproducing apparatus for**

recording and reproducing video signals inputted from a plurality of different cameras).

Therefore, taking the combined teachings of Yoshikawa and Kohri, as a whole, it would have been obvious to one of ordinary skill in the art to modify the recording unit of Yoshikawa et al to record images simultaneously so as to combine them into one image as a whole and to store that image in a separate location also *satisfactorily correcting an image of a reproduced image signal with an error even when video signals from a plurality of cameras are recorded (column 1, lines 63-67 of Kohri et al).*

Re claim 6, the apparatus according to claim 5, wherein the code includes a sensing time of an image. Examiner takes Official Notice to note that it is well known in the art for video recording units to also record associated time of an image as claimed.

Re claim 7, the apparatus according to claim 5, wherein the code includes a sensing position of an image. The combined teaching of Yoshikawa and Kohri also teaches sensing position of an image because Yoshikawa takes into accounts spatial relationship of multiple images from multiple cameras to form 360 degrees video image **(Yoshikawa, para 0067).**

Re claim 8, the apparatus according to claim 5, further comprising: generation unit adapted to generate an image viewed from an approximately matched viewpoint position by joining the images, which are recorded in said image recording unit and are appended with the common code, in accordance with positions and postures of said first and second image sensing units and said first and second view control units, which are measured in advance **(Claim limitations has already been discussed and rejected**

based on claim 5, furthermore, Yoshikawa et al discloses a plurality of image pickup means, figs. 6-7, and images of divided object portions are processed into one combined video image by processing means, para 0067).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Yamada (US 2002/0030735), which pertains to an image processing apparatus that can reduce the memory capacity of a memory forming part of the image processing apparatus and can correct the optical axis misalignment of a video camera in a simple manner.
- b. Iwasaki (US 2005/0231590), which pertains to a three-dimensional image-capturing apparatus includes an image-capturing device having a plurality of image-capturing regions and a plurality of optical systems for forming images of a subject in the image-capturing regions.
- c. Yoshikawa (US 2003/0214575), which pertains to an image pickup device includes a plurality of plane mirrors arranged in the form of a polygonal pyramid, and a plurality of cameras disposed opposite the plane mirrors, respectively.
- d. Arpa (US 2003/0085992), which pertains to a method and apparatus for providing immersive surveillance wherein a remote security guard may monitor a scene using a variety of imagery sources that are rendered upon a model to provide a three-dimensional conceptual view of the scene.

Contact

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Morehead whose telephone number is 571-270-1183. The examiner can normally be reached on Monday - Friday (alt) 7:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on 571-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JM


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SUPERVISORY PATENT EXAMINER